AN INQUIRY INTO THE COMPARATIVE ABILITY OF THE CANADIAN PROVINCES TO FINANCE EDUCATION

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AN INQUIRY INTO THE COMPARATIVE ABILITY OF THE CANADIAN PROVINCES TO FINANCE EDUCATION

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Finally, a great debt must be acknowledged to Kenneth F. Argue whose earlier studies were responsible for suggesting the fields of this investigation, and the methods of research which have been used.

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SYNOPSIS

The author's primary aim in this investigation was to contribute to the research which must be done before it can be established whether or not a need exists for Dominion aid to education. This has been done by measuring the educational "loads" of the Canadian provinces and the ability of the provinces to finance adequately the educational systems which they must provide.

It was found that Newfoundland was facing a greater educational load by a larger margin than any other province and that the other Maritime provinces are carrying a load much heavier than any other part of Canada with the possible exception of Saskatchewan. Alberta and Quebec have heavy loads in comparison with Ontario, Manitoba and British Columbia, though their loads are substantially lighter than those of the Maritimes. British Columbia has the lightest load of any Canadian province by a significant margin.

It was further found that the Maritimes have a very low ability to finance education as compared to other parts of Canada. Quebec and Saskatchewan have substantially less ability than any of the other provinces with the exception of the Maritimes. Manitoba has a comparatively high ability while Alberta, Ontario and British Columbia appear to have a high ability to finance education as compared to that of the rest of Canada.

The limited scope of this investigation and the relative nature of the figures arrived at, make it impossible to conclude with certainty that Dominion aid for education is necessary in Canada. However, results of this study do lend a great deal of support to such a conclusion. When it can be shown, for example, that a province which

is responsible for educating 5.8% of the children in Canada has only 3.6% of the total personal income of Canada, it would seem that there should be some additional source of revenue for that province.

CHAPTER I

INTRODUCTION

1. GENERAL

As many areas of Canada face the problem of modernizing and extending their educational systems, and as all areas face rapidly increasing costs of education, it is becoming ever more frequent to hear educational authorities call for Dominion aid to education as the only hope of meeting their responsibilities. Many widely known organizations, notably the Canadian Teachers' Federation, are carrying on more or less organized campaigns with a view to persuading a large body of electors to demand that Dominion aid be provided. No study of the scope of this one can hope to determine whether such aid is necessary, or how much must be provided if it is necessary. However, information regarding the financial abilities of the Canadian provinces to support public enterprises such as education, is essential to objective thinking about these questions. For this reason the following study has been undertaken.

Argue aptly states the problems of Canadian educators in the field of public support of education when he says:

> ...Educationists can, of course, answer (when asked what should be done in Canada) 'American authorities have recommended this or that technique to meet the American counterpart of the Canadian dilemma.' But such answers will not entirely suffice. While American experience is highly relevant, American counsel invaluable, and American research studies basic to an attack on Canada's problem, still Canadians must make their own studies, scrutinize their own statistics, and work out their own solutions if they are to measure up to the national educational responsibility which is theirs.[1]

1. Kenneth F. Argue, Financing education in the Canadian provinces, a study sponsored by the Canadian Teachers' Federation, 1941, Introduction, p.1.

This study will scrutinize Canadian statistics with a view to clarifying some of the issues involved in the current controversy over Dominion aid to education. It is not proposed to debate the legal aspects of whether or not the B.N.A. act permits such aid; nor is it proposed to solve the problem of how such aid might be administered. Rather it is the intention here to inquire into one or two aspects of the whole educational finance picture, with the hope that the resultant findings may aid further studies and thus contribute to the settling of the controversy.

It might be well at this point to acknowledge the existence of a body of opinion among some members of the general public that there is not a direct relationship between the quality of education and the amount of money spent upon it. While this may be true of certain classrooms, certain schools, or even of certain localities, it is felt that in general there is very little validity in this opinion. It is maintained here that the level of expenditure of some provinces must be raised if Canadian boys and girls are all to have equal educational opportunities. Certainly such equal opportunities cannot be said to exist when the per pupil expenditure on education in Canada varies from little more than fifty dollars to more than two hundred dollars.

Argue has this to say:

> It is the common assumption of our thinking about value and quality, namely, that you generally get just about what you pay for; that in education as elsewhere, you get value in proportion to price. That there are certain exceptions to this assumption can no more be denied than its general soundness.[1]

Mort states:

> There is undoubtedly a high degree of association between the amount of money spent and both the quantity and quality of the instructional materials and staff provided.[2]

1. Ibid. pp. 2-7.
2. Paul R. Mort, Financing the public schools of Maine, the Maine Finance Commission, 1934, p.64.

Englehardt and Englehardt sum up the situation as follows:

> Every aspect of education is related to cost, and say what one will, support will be gained, increased and retained only as the public is willing to see that the product bears a definite relationship to the cost, and that it is being bought at market prices.[1]

This study takes the considered opinion of these authors, based on research and experience, as its justification for having compared the quality of education of the provinces exclusively from the viewpoint of financial statistics. It maintains that the ability of the provinces to educate their boys and girls adequately is directly proportional to their ability to spend adequate sums on education.

2. RELATED RESEARCH

Between 1941 and 1945 Argue published the results of three investigations into various aspects of the financing of education in Canada[2]. In view of the fact that this study was suggested by Argue's previous work in this field, it would be well to summarize here the conclusions of his research:

1. Education in the Dominion as a whole should receive twice as much financial support in 1945 as it was receiving in 1941.

2. Ability to finance education at adequate levels varied widely from province to province, and there was a clear indication of a need for Dominion equalization grants to the provinces.

3. As a means of removing or greatly lessening the inequality in Canadian education three administrative and financial adjustments or reforms were recommended:

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1. Englehardt and Englehardt, Public school administration, New York, Bureau of Publications, Teachers' College, Columbia University, 1927, p.889.
2. Kenneth F. Argue, op. cit., p.1.

(a) For the municipality or small district: larger units of administration.

(b) For the provinces: sound equalization schemes supported by adequate provincial funds.

(c) For Canada as a nation: Dominion equalization aid for education.[1,2,3]

Many authorities have written on the topic of equalization of educational costs. Since the general treatment of the subject as given by Mort and Reusser[4] would seem to have included the best features of most of the plans, those authors will be used for reference here. They sum up their proposals thus:

> The current pattern calls for the setting of a satisfactory minimum or foundation programme below which no locality will be allowed to go and to which any district would be permitted to add. In addition, it calls for the sharing of the support of the foundation programme in such a way that the burden shall fall upon people in all localities equally according to their power to pay taxes. It further demands that the burden of the property tax that supports local initiative shall not be greater than the burden on other types of taxes.
>
> In the light of the fact that some states do not have the power to provide an adequate minimum programme, there is a growing realization of a national interest in the establishment of a national minimum programme and in so sharing the cost as to make it available in all states.[5]

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1. Kenneth F. Argue, op. cit.
2. _____, Framework for appraising the financing education in the Canadian provinces, Canadian Teachers' Federation, Ottawa, 1942.
3. _____, Wealth, Children and education in Canada, Canadian Teachers' Federation, Ottawa, 1945.
4. Paul R. Mort and Walter C. Reusser, Public school finance, New York and London, McGraw Hill Book Company, 1941, Ch. XVII and XVIII.
5. Ibid., p.401.

Mort and Reusser have evolved the following formula for distributing state aid to education[1]:

State aid for a given school district	=	(number of units of educational need in the district	X	(unit cost of the foundation programme	-	(local contribution at a uniform rate in accordance with ability to pay.

Mort and Reusser have suggested that the unit cost be about $2,000 per weighted elementary classroom of twenty-nine elementary pupils[2] This figure was based on costs ten or more years ago, and would be entirely inadequate now, as it would not even pay the teacher's salary in many cases. Before the problem of Dominion aid to education can be settled in Canada some basic foundation programme of the type recommended by Mort and Reusser must be laid down and its cost calculated for each area of the Dominion. A study which would result in such data would seem to be a need in Canada in the near future.

The formula given above is simple but there might be value in stating it in words. Briefly, the plan is this:

(a). Decide what educational expenditure per unit of educational need isnecessary in order to maintain the minimum defensible standard of education in a state (province).

(b) Using the unit cost of the foundation programme and the number of units of educational need in the district, calculate the total cost of providing the foundation programme for that district.

(c) Adopt a standard assessment within the province for all local administration units, and a standard tax rate.

1. Ibid., p.407
2. Ibid., p.407

(d) The difference between the total cost of the foundation programme and the money raised in the district by the uniform rate is the amount which must be provided by the state.

Extending the principle of equalization to apply to federal participation would not seem to necessitate any essential variation of the formula on page 5. Basically such a formula would be:

Federal Contribution	=	Units of educational need in the province	X	Unit cost of fundation programme	-	(Provincial (contribution (at a uniform (rate in accord- (ance with (ability to pay
					+	Local contribution at a uniform rate in accordance with ability to pay.

As Mort and Reusser point out:

> The chief differences between the measure of educational need for school districts and for states are:
>
> 1. A measure usable in a Federal law can utilize a density measure to take care of both the small class and of transportation corrections.
>
> 2. There is considerable justification for the use of census data rather than attendance data.
>
> The measure of ability, however, must be radically different. Within the states the local tax system is set by the state. The federal government has no such control over state tax systems. Therefore, while presumably there is uniformity of tax systems among school systems, there is no such uniformity among states. To obtain a fair measure of ability of the states to support education, it is necessary to use some uniform tax plan as a basis of an estimate[1].

3. THE PROBLEM

In order to provide a conclusive answer to the question of the necessity of Dominion aid to education it would appear that answers would first have to be obtained to the following questions:

1. What is a defensible minimum programme for Canadian schools?

2. How many units of educational need are there in each province?

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1. Ibid., p.490

3. How much will the minimum programme cost per unit of educational need?
4. What is the ability of each province to pay for education?
5. What discrepancy, if any, exists between the ability of each province and its need? (Units of educational need X cost per unit of need.)

This study will limit itself to attempting to find an answer to questions "2" and "4". It is hoped that a contribution may thus be made which will be of value in solving the larger problem of dominion aid to education. Certainly this problem cannot be solved until the educational load of each province and the ability of each province to pay taxes for education have been established.

4. PLAN OF PROCEDURE

It has been found necessary to select the year 1949 and to collect data for that year. This has been made necessary by the fact that the departments of education of the various provinces do not report at a uniform time. The above year is the last for which complete data for all the provinces are available.

This is to be a comparative study. It is hoped to give an accurate picture of the educational load and the ability to finance education for each province, stated as a comparison with all the other provinces. No attempt can be made in this study to make an absolute statement that the ability of a certain province is exactly so much. Since British Columbia is the province which spends the most on education per unit of educational need that province will in all cases be used as the base from which to compare the load and ability of each of the others.

The educational load will be presented, firstly, on the basis of actual enrolment; secondly, on the basis of weighted pupils, as defined later, and finally on the basis of potential weighted pupils.

Ability will be investigated from several viewpoints:

1. Personal income behind each unit of educational need.

2. Total provincial and municipal revenue behind each unit of need.

3. The comparative share of each province of certain basic economic data. (Total Retail Sales, Total Personal Income, Total Net Production as a combined total.)

Finally, the totals of the factors mentioned in "3" above will be used to investigate the relationship between the actual taxation in each province as compared with the potential taxation if all the provinces

taxed themselves at the rate of British Columbia. This should give an indication as to what extent the provinces are undertaxing themselves, or overtaxing; but it must be emphasized that this, too, will be a comparative measure and not an absolute one.

5. DEFINITION AND DELIMITATION OF TERMS.

1. Education: In this study the term education is used to refer to the instruction provided in publicly controlled and publicly supported day, elementary and secondary schools.

2. Elementary Grades: Grades 1 to 8 inclusive.

3. Secondary Grades: Grades 9 to 12 inclusive.

4. Educational Need: The educational need of a province refers, in general, to the total number of children to be educated in that province. Three measures of need are employed in this study: (1) the number of pupils enrolled in school; (2) the number of "weighted" pupils; and (3) the number of "potential" weighted pupils.

5. Weighted Pupil: This is a unit of educational need which takes into account the higher costs of educating secondary school pupils as compared with elementary school pupils. The secondary school enrolment is multiplied by an appropriate figure and then added to the elementary school enrolment to obtain the total number of weighted pupils.

6. Potential Weighted Pupil: This is a unit of educational need which takes into account not only the pupils in attendance at school, but also those who should be in school. The procedure in determining the number of potential weighted pupils is explained in Part 10 of Chapter 2.

7. Educational Load: The educational load of a province refers to the educational burden which must be carried by each adult in the province if the educational needs of that province are to be met. One common measure of educational load is the number of children per adult in a province. The load may also be expressed in terms of the number of adults behind each pupil enrolled.

8. Total Revenue: For purposes of convenience the term "total revenue" is used to refer to the combined provincial and municipal revenues of a province.

9. Economic - Activity Total: For purposes of convenience this expression has been coined to refer to the total production, retail sales, and personal income in a province.

10. Ability: The ability of a province to support education will be expressed in terms of some financial unit, such as total revenue, per unit of educational need.

CHAPTER II

THE EDUCATIONAL LOADS OF THE VARIOUS CANADIAN PROVINCES

1. EDUCATIONAL NEED AND EDUCATIONAL LOAD

The term "educational need" is a standard term used extensively by Mort and other authorities in their writing about the financing of education. Educational need is the name given to the total job to be done in a given educational administrative area. Stated simply, the educational need of a state or province is the total number of children to be educated.

Argue has introduced the term "educational load"[1]. He defines load as the number of children to be educated per standard unit of population. He uses as his standard unit of population 1,000 adults, and bases his comparisons of the need of provinces for financial aid on the number of children per 1,000 adults.

A few words would appear to be needed at this point about the relative value of the "need" and "load" concepts. To begin with, load cannot be established without first determining need. Secondly, the purposes which the two concepts serve are entirely different in that:

(a) "Need" can be used to calculate the total cost of a foundation programme, while "load" cannot.

(b) "Load" is really a better indicator of relative need for help, i.e., "load" is really a kind of measure of ability. This can be seen if "load" is considered as an ability indicator in terms of the number of adults per child. Thus it may quite readily be compared with

1. Kenneth F. Argue, Financing education in the Canadian provinces, Canadian Teachers' Federation, Ottawa, 1941, p.3.

"financial ability" which is also an ability indicator in terms of the number of dollars per child.

In this study, educational need will be established and used as the basis for the calculation of educational load. Educational load will then be used in developing various comparisons of the ability of the provinces to support education.

2. MEASURES OF EDUCATIONAL NEED

The adoption of suitable measures of educational need for this study has presented a problem of no mean proportion. Mort[1], in appraising several measures of need, says that each should be evaluated in terms of:

1. The equitableness with which it takes into account the variation in cost due to the variation in size of school.
2. The equity with which it treats districts facing the same conditions.
3. The degree with which it takes into account that high school education is more expensive than elementary education.

Mort in another publication has devised a measure of educational need based on average daily attendance, which takes into account the cost effect of:

1. The relative number of children attending at the elementary school level as opposed to the high school level.
2. The degree of density or sparsity of population.
3. The variation of price or cost of living in the various states[2].

1. Paul R. Mort and Associates, Principles and methods of distributing federal aid for education, Washington, U.S. Government Printing Office, 1939, pp. 56-59.
2. Paul R. Mort, State support for education, Washington, American Council on Education, 1933, pp. 47-66.

Mort's measure has the great advantage of using a uniform measurement of the educational task facing each state. As Norton and Norton say:

> One child does not necessarily mean the same thing in one state as it does in another in terms of financing a given type of educational opportunity[1].

In this study educational need is measured in terms of:

(a) Number of pupils enrolled.

(b) Number of weighted pupils.

(c) Number of potential weighted pupils.

It is felt that, while straight enrolment figures have been found inadequate in themselves as a measure of educational need, there is value in comparing the enrolments as a measure of the actual need in terms of pupils coming to school in the various provinces. Furthermore, the figures for enrolment are the basis for calculating indices of load which will be presented. While the number of children 5-17 years, as given by census data, has been used by some writers, such a measure of need has been discarded in this study because the use of such data necessitates several assumptions. Some of these assumptions are:

1. That children five years of age should be in school.

2. That a child's schooling should end at seventeen years.

3. That at some arbitrarily fixed age within the above limits children should be classified as secondary school students. If such an assumption is not made, it becomes impossible to allow for the increased cost of secondary education when calculating educational need.

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1. Norton and Norton, op.cit., p.28

3. WEIGHTING FOR THE GREATER COST OF SECONDARY EDUCATION

The weighted pupil represents an attempt to take into account the relatively higher cost of educating a high school pupil as compared with that of educating an elementary school pupil. Some years ago Mort found that secondary education cost 1.7 times as much per pupil as elementary education.[1] There is some indication at present that the difference in cost is decreasing because of the introduction of the single salary schedule and the increase in qualifications of elementary teachers. However, no definite evidence of this decrease is as yet available. Unfortunately, Ontario is the only province which publishes educational costs separately for secondary and elementary sections. For the school year 1948-49, the last for which data are available, Ontario's outlays, after subtracting capital expenditures made from current revenue, are as follows:

TABLE I

ELEMENTARY AND SECONDARY SCHOOL COSTS IN ONTARIO, 1948-49

	Enrolment[2] (thousands)	Total Expenditure[2] $	Expenditure per pupil $
Elementary schools	572.0	64,919,867	113.50
Secondary schools	132.2	25,929,147	196.11

Ratio of secondary school expenditure to elementary school expenditure-: 1.73:1

Thus, Ontario spent 1.73 times as much per pupil on secondary education as it did on elementary education in 1948-49. In view of this fact,

1. Mort, op.cit.
2. Department of Education, Annual Report, Province of Ontario, 1951.

decided to use the 1.7 ratio for the purposes of this study. Accordingly, throughout this section, the data as reported for secondary school enrolment, has in each case been multiplied by 1.7. The result may be said to represent the high school pupils as weighted pupils. When the total of weighted pupils has been added to the enrolment figures for elementary schools, the total educational need for each province in terms of elementary pupils or their equivalent will have been established.

4. JUSTIFICATION OF THE USE OF ENROLMENT DATA

The adoption by this study of enrolment data rather than that of average daily attendance may be questioned. This course is defended on the following grounds:

1. Average daily attendance is greatly affected by inclement weather conditions, bad road conditions, sickness. These are likely to vary widely from province to province, particularly road conditions.
2. Teaching staff and classroom space as well as many other items of educational expense must take into account enrolment rather than average daily attendance.
3. The only really significant part of the difference between enrolment and average daily attendance is represented by "drop-outs".
4. It is to be presumed that a progressive philosophy of education has reached at least the top levels of educational administration in all of the Canadian provinces; and that, therefore, all provinces to a varying but large degree realize their obligations to provide more years of schooling per pupil and to reach all sections of their educable youth.

For the above reasons and in the face of disagreement by some authorities, this study will be confined to enrolment data in considering educational need.

5. URBAN-RURAL POPULATION RATIO

It is not considered practical to attempt a weighting to offset differing urban-rural population ratios. Up-to-date statistics necessary for such a weighting are not at present available. The great shifts in population which have evidently taken place since the last Dominion-wide census would seem to make the use of 1941 census data for this purpose open to question. Nor is such a weighting considered of as great significance for this investigation as it is in American studies whose purpose was to establish formulae for equalization programmes within individual states. Nevertheless, it will be found that the calculations which result in the potential weighted pupil as a unit of educational need will have indirectly made some allowance for this factor.

6. ESTABLISHMENT OF DATA FOR THE TOTAL NUMBER OF ADULTS IN EACH PROVINCE

The establishment of a reasonably accurate figure for the total number of adults for each province posed a problem of no mean proportion. After much consideration it was decided to establish the number of adults by simply subtracting from the census estimates for the total population of each province the number of people in the age groups 0 - 19 in each province. The data were secured from the Dominion Bureau of Statistics' publication, "Census and Estimated Populations of Canada and the Provinces by Age and Sex Group, 1949".

This procedure requires only one assumption, namely that boys and girls should stay in school until they are nineteen. Since the normal age for finishing high school is usually accepted as being eighteen, and since the population in the age group 0 - 19 contains only those who are not yet 19½, and since the addition of Grade XIII in some provinces and the custom of taking Grade XII in two years in others has extended the high school leaving age by at least a year, it would seem that this age group could be said to represent those who are not yet adults. This is further strengthened by the fact that educationists generally are advocating secondary education for all boys and girls. Hence this age group may be said to represent those who should be in school in each province plus the pre-school age children.

TABLE II

ADULT POPULATIONS OF THE PROVINCES

	Total Population[1] 1949 (thousands)	Population 0-19 years [1] 1949 (thousands)	Adult Population 1949 (thousands)
NFLD.	348.0	157.1	190.9
P.E.I.	94.0	39.1	55.9
N.S.	645.0	254.5	390.5
N.B.	516.0	219.0	297.0
QUE.	3,887.0	1,612.6	2,274.4
ONT.	4,411.0	1,463.6	2,947.4
MAN.	778.0	274.9	503.1
SASK.	861.0	326.7	534.3
ALBERTA	871.0	333.3	537.7
B.C.	1,114.0	341.9	762.1

1. Dominion Bureau of Statistics, Estimated population by sex and age groups, for Canada and the provinces, Ottawa, 1950.

7. MEASURES OF EDUCATIONAL LOAD

Since the entire adult population of a province is the real source of the tax monies which support education, the use of the number of adults behind each child enrolled would seem to be a good practice in measuring educational load. True, businesses pay taxes too, and governments contribute, but it is not hard to see that in the final analysis all taxation has its source in the adult population, who either directly or indirectly pay the taxes.

.....Argue measures educational load in terms of:

1. Number of children 5-17 years per 1,000 adults.
2. Birthrate per 1,000 population.
3. Number of children enrolled per 1,000 adults.
4. Number of children per 1,000 adults.
5. Percentage rural population to urban population[1].

.....This study has adopted the following measures of educational load:

1. Number of adults per pupil enrolled.
2. Number of adults per weighted pupil.
3. Number of adults per potential weighted pupil.

.....It is felt that "educational load" in itself is a valuable indicator of the relative needs of the provinces for Dominion assistance. If investigation reveals, for example, that Province "A" has 2 adults to support each child to be educated, while Province "B" has 4 adults to do the same job, it is obvious that the adults in Province "A" are facing a task just twice as great in providing adequate education for its children. Of course, other factors must be taken into account before this need for assistance can be accurately compared. For example, the income of the

1. Kenneth F. Argue, op. cit., pp.2-7.

adults in Province "A" may be substantially greater than that of the adults in Province "B". In other words, financial statistics must be combined with the data for educational load before a really good determination of the need for assistance can be made. However, it is maintained that, lacking any financial statistics, educational load in itself is a useful indicator of the relative needs of the provinces for Dominion assistance.

Possibly some justification is needed for the use of the "number of adults behind each child" as a unit of load, rather than "number of children per adult". While it is admitted that a comparison is easier to make when the latter unit is used, the necessity which exists for combining measures of educational load with financial data in order to arrive at satisfactory measures of financial ability makes the former unit more useful. It will not be too hard to interpret the comparisons made with the unit "number of adults behind each child" if it is remembered that an inverse relationship exists between the number of adults behind each child and the educational load. This is clearly shown by means of indices of load which have been presented.

Table III shows the number of adults behind each child enrolled.

TABLE III

NUMBER OF ADULTS PER CHILD ENROLLED IN
PROVINCIALLY CONTROLLED
DAY ELEMENTARY AND SECONDARY SCHOOLS

	Estimated Total Number of Adults (thousands)	Total Enrolment[1] (thousands)	Adults per Child Enrolled
NFLD.	190.9	72.9	2.6
P.E.I.	55.9	18.0	3.1
N.S.	390.5	127.1	3.1
N.B.	297.0	93.6	3.2
QUE.	2,274.4	582.5	3.9
ONT.	2,947.4	704.3	4.2
MAN.	503.1	123.0	4.1
SASK.	534.3	167.0	3.2
ALBERTA	537.7	160.8	3.3
B.C.	762.1	138.9	5.5

1. Data taken from the annual reports of the various Departments of Education.

TABLE IV

AN INDEX OF EDUCATIONAL LOAD AS ESTABLISHED
BY THE NUMBER OF ADULTS PER CHILD ENROLLED IN
PROVINCIALLY CONTROLLED DAY ELEMENTARY AND SECONDARY SCHOOLS

	Adults per Child Enrolled	Index of Educational load B.C.'s Load Being Taken as an Index of 1.00
NFLD.	2.6	2.1
P.E.I.	3.1	1.8
N.S.	3.1	1.8
N.B.	3.2	1.7
QUE.	3.9	1.4
ONT.	4.2	1.3
MAN.	4.1	1.3
SASK.	3.2	1.7
ALBERTA	3.3	1.7
B.C.	5.5	1.0

8. EDUCATIONAL LOAD EXPRESSED IN TERMS OF THE NUMBER OF ADULTS BEHIND EACH CHILD ENROLLED

According to the indices of load established by Table IV it is clear that the Province of Newfoundland has the greatest educational load with Nova Scotia, Prince Edward Island, New Brunswick and Saskatchewan being next in that order. Alberta and Quebec have loads only slightly lighter. Ontario and Manitoba might be said to have comparatively light loads while British Columbia is shown as having by far the lightest educational load of any of the Canadian provinces.

It should be mentioned here that the fact that British Columbia is shown in this comparative index as having the lightest load does not in itself indicate that this load is necessarily light. It might be so heavy as to be nearly unbearable. Nor does Newfoundland's position as the province bearing the heaviest educational load positively indicate that the province's load is too heavy. That can only be determined by an inquiry into the abilities of the provinces to support education. Such an inquiry will constitute a later section of this study.

The indices established are only one indication of comparative educational load, and are based exclusively on enrolment figures without any attempt having been made to take into account the relatively higher cost of secondary education. The method to be used for weighting for this factor has been explained earlier in this section. The next few tables will establish a further set of indices of educational load which takes into account this higher cost of secondary education.

TABLE V

EDUCATIONAL NEED AS WEIGHTED PUPILS

	(1) Total Enrolment[1] Elementary Grades, 1949	(2) Total Enrolment[1] Secondary Grades, 1949	(3) Enrolments Column 2 x 1.7 = Weighted Elementary Pupils.	(4) Total Need (Column 1 plus Column 3	(5) Ratio Elementary Grade Pupils to Secondary Grade Pupils.
NFLD.[4]	65,362	7,578	12,883	78,245	8.6:1
P.E.I.	15,488	2,257	3,837	19,325	6.9:1
N.S.	110,325	16,744	28,465	138,790	6.6:1
N.B.	85,836	7,719	13,122	98,851	11.1:1
QUE.[3]	565,232	42,334	71,968	637,200	13.3:1
ONT.	572,063	132,217	224,768	796,200	4.3:1
MAN.	103,144	19,747	33,570	136,714	5.2:1
SASK.	137,107	20,602	35,023	172,130	6.7:1
ALBERTA	129,112	31,709	53,905	183,017	4.1:1
B.C.	123,440	32,075	54,528	177,968	3.9:1

1. Data from the annual reports of the Departments of Education of the various provinces except where otherwise noted (for school year 1948-49).
2. Supra, p.14.
3. Data from Elementary and Secondary Education in Canada, 1944-46, Dominion Bureau of Statistics, Ottawa, 1949, p.50.
4. Newfoundland data for the year 1947-48.

TABLE VI

AN INDEX OF EDUCATIONAL LOAD AS ESTABLISHED
BY THE NUMBER OF ADULTS BEHIND EACH WEIGHTED PUPIL

	Total Need in Weighted Pupils (thousands)	Total Adults (thousands)	Adults per Weighted Pupil	Index of Educational Load, B.C.'s load being Taken as an Index of 1.00
NFLD.	78.2	190.9	2.4	1.8
P.E.I.	19.3	55.9	2.9	1.5
N.S.	138.8	390.5	2.8	1.5
N.B.	98.9	297.0	3.0	1.4
QUE.	637.2	2,274.4	3.6	1.2
ONT.	796.2	2,947.4	3.7	1.2
MAN.	136.7	503.1	3.7	1.2
SASK.	172.1	534.3	3.1	1.4
ALBERTA	183.0	537.7	2.9	1.5
B.C.	178.0	762.1	4.3	1.0

9. EDUCATIONAL LOAD AS ESTABLISHED BY USE OF THE WEIGHTED PUPIL

While the indices of load as given in Table VI do not cause any great change in the relative positions of the various provinces as given in Table IV, it is significant that, in weighting for the greater cost of secondary education, the calculations have tended to reduce the spread between the highest and lowest index of load and to make some changes in the relative positions of the provinces. Newfoundland is still shown as having the greatest educational load by a good margin with Nova Scotia and Prince Edward Island and Alberta in the Very High Load classification. Saskatchewan's drop to a position slightly below that of Alberta is worthy of note. Both of these provinces now are shown with a comparatively high load. Manitoba, Ontario and Quebec are shown with fairly light loads with British Columbia again having the lightest load. The considerable decrease in the indices as compared to that of British Columbia is mainly to be attributed to the fact that the latter province has the greatest proportion of its total enrolment represented by secondary school pupils. This is shown in Table V, Column 5.

A study of Table V, Column 5, is likely to cause doubt that even the weighting for secondary school costs has given a true indication of the comparative loads of the provinces. When the total enrolment represented by secondary school pupils varies within the country from less than 8% in Quebec to more than 25% in British Columbia, some further consideration of the problem would seem to be indicated.

10. THEORY OF THE POTENTIAL WEIGHTED PUPIL

Accordingly, the results of a further study are given. This further study undertakes additional weighting with respect to secondary education. It assumes that whatever the reason for the varying secondary-elementary enrolment ratio, the present progressive philosophy of education would suggest the desirability of as many students as possible receiving some secondary education. It further assumes that it would not be unreasonable to assert that the secondary-elementary enrolment ratio for British Columbia would not be considered too high to set as the aim of the rest of Canada. Therefore, the number of potential secondary school pupils which each province would have were its secondary-elementary enrolment ratio equal to that of British Columbia, is shown. The latter province shows that its secondary school enrolment represents 26% of its elementary enrolment. This figure has been applied to the elementary enrolment of each of the other provinces. The resulting figures have been multiplied as before by 1.7 to adjust for the greater cost of secondary education. Finally, a new set of indices of load have been calculated with these new data. Table VII shows the results of these further calculations.

In view of the widespread agreement among laymen and educators about the desirability of more education for everyone who is capable of profiting by it, it is felt that this further study is essential. Furthermore, part of the explanation of the varying secondary-elementary enrolment ratios, a large and important part, no doubt lies in the varying relations of urban to rural population in the various provinces. This last set of indices, therefore, may well make an important adjustment for this factor which has, up to this point, been neglected for reasons explained earlier.

TABLE VII

TOTAL NEED IN POTENTIAL WEIGHTED PUPILS OF EACH PROVINCE IF ITS RATIO OF ELEMENTARY TO SECONDARY PUPILS WERE EQUAL TO THAT OF BRITISH COLUMBIA

	(1) Total Enrolment Elementary Grades	(2) Column I times .26 (high school enrolment if Elementary-Secondary ratio was equal to B.C.'s	(3) Column 2 times 1.2 (potential Secondary school enrolment in terms of weighted pupils)	(4) Column I plus Column 3 (total potential weighted pupils)
NFLD.	65,362	16,994	28,890	94,252
P.E.I.	15,488	4,027	6,846	22,334
N.S.	110,325	28,685	48,764	159,089
N.B.	85,836	22,317	37,939	123,775
QUE.	565,232	146,960	249,832	815,064
ONT.	572,063	148,736	252,851	824,914
MAN.	103,144	26,817	45,589	148,733
SASK.	137,107	35,648	60,602	197,709
ALBERTA	129,112	33,569	57,067	186,179
B.C.	123,440	32,075	54,528	177,968

TABLE VIII

AN INDEX OF EDUCATIONAL LOAD AS ESTABLISHED
BY THE NUMBER OF POTENTIAL WEIGHTED PUPILS IN EACH PROVINCE

	Total Adults (thousands)	Total Potential Weighted Pupils (thousands)	Adults per Potential Weighted Pupil	Index of Educational Load, B.C.'s Load Being Taken as an Index of 1.00
NFLD.	190.9	94.3	2.0	2.2
P.E.I.	55.9	22.3	2.5	1.7
N.S.	390.5	159.1	2.5	1.7
N.B.	297.0	123.8	2.4	1.8
QUE.	2,274.4	815.1	2.8	1.5
ONT.	2,947.4	824.9	3.6	1.2
MAN.	503.1	148.7	3.4	1.3
SASK.	534.3	197.7	2.7	1.6
ALBERTA	537.7	186.2	2.9	1.5
B.C.	762.1	178.0	4.3	1.0

11. EDUCATIONAL LOAD AS ESTABLISHED BY USE OF THE POTENTIAL WEIGHTED PUPIL

It is felt that of the measures of educational load given, that in Table VI is the least reliable even though it does take into account the greater cost of educating a secondary school pupil. It is less reliable because it weights the indices in favour of those provinces which are providing the most secondary education at present. In other words, the element of performance enters to such an extent as to cast doubt on its reliability as an accurate measure of load. The first measure, as given in Table IV, is incomplete in that it takes no account of the greater cost of secondary education. The measure, as given in Table VIII, on the other hand, takes this last factor into account and, in addition, goes a long way toward eliminating the factor of performance by admitting that most provinces have a potentially greater secondary school load than their actual secondary school enrolments would seem to indicate. Too, as was pointed out before, the methods used in calculating this set of indices tend to make some adjustment for varying urban-rural population ratios, a factor which authorities hold to be important. For the above reasons this study will consider that the measures of educational load based on the potential weighted pupil are the ones most likely to give a clear picture of the situation across Canada.

The question will probably arise as to what extent account should be taken of students who are obtaining their secondary education in private schools. This study takes the position that it is the constitutional responsibility of each province to provide education for its boys and girls, and that the educational need of a given province must take into account all the boys and girls who should be in school. In other words, the fact that one or more provinces may have substantial

numbers of pupils in private schools can have no significance in calculating the total educational need of those provinces.

12. SUMMARY OF THE FINDINGS OF THIS SECTION

1. Newfoundland is facing an educational load very much greater than that of any other province.

2. The other Maritime provinces are carrying a load much heavier than those of other parts of Canada except, possibly, Saskatchewan.

3. The educational loads of Alberta and Quebec appear to be classifiable as heavy in comparison to those of Ontario, Manitoba and British Columbia.

4. Ontario and Manitoba, while they are carrying educational loads significantly higher than that of British Columbia, have loads of very moderate proportions as compared to those of the provinces mentioned in 1, 2 and 3.

5. British Columbia has the lightest educational load in Canada by a significant margin.

In conclusion, it would seem advisable to reiterate the statement made near the beginning of this section that it has not been established that any province has in reality a light load nor that any province has a load which is too heavy to bear. It has been established, however, that the loads of some of the provinces are double or, in some instances more than double, the loads of other provinces. It remains for the section on ability to attempt to determine what the relationship is in each province between the actual educational need and the financial ability to meet this need.

CHAPTER III

THE ABILITY OF THE CANADIAN PROVINCES TO FINANCE EDUCATION

1. MEASURES OF ABILITY TO FINANCE EDUCATION

Burke[1] discusses the problem of devising a reliable measure of ability to finance education and gives the opinions of a number of the more recent writers on the subject. Since Burke's book is very new and presumably up-to-date and since he states that its publication was strongly encouraged by Mort, a review of his findings together with the references given by him would seem to be of value at this stage. Burke suggests that for larger units of government it is possible to construct an index of tax-paying ability from basic economic statistics. Cornel[2] developed a formula based on total population, motor vehicle registrations, production, number of residence telephones, savings deposits and postal receipts. Bacon[3] developed techniques for measuring fiscal capacity of counties in terms of incomes. Burke points out that a clear-cut definition of tax-paying ability is not easy to make. Limitations of data, weighting of factors and keeping the index up-to-date, he says, present great but not unsurmountable technical difficulties. He mentions the Alabama index which is based on the percent of the total state sales tax paid, passenger automobile licences paid, state personal income tax paid, assessed valuation of public utilities, farm income, and value added by manufacture, all weighted according to a prescribed form.

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1. Arvid J. Burke, Financing public schools in the United States, New York, Harper and Brothers, 1951, pp. 349-353.
2. F.G. Cornel, A measure of tax-paying ability of local school administrative units, New York, Teachers' College, Columbia University, 1936.
3. M.A. Bacon, Income as an index of final capacity of Michigan Counties, 1941.

Other states have adopted similar methods. Mort[1] originally took the stand that, provided different areas had assessments made on an equalized basis, relative ability to finance education could be measured by the relation between their property assessments. However, Mort has since compiled an index in which are included value added to raw products by manufacture, farm cash income, postal receipts, retail trade, net income from $5,000 - 25,000, net incomes over $25,000, urban population, motor vehicle registration and total population[2]. Norton and Norton[3] suggest a similar list. Argue uses the following measures:

1. National wealth per census child, 5 - 17 years.
2. National wealth per child enrolled.
3. Share of national income behind each child of school age.
4. Share of national income behind each child enrolled.
5. Taxable income per child enrolled.
6. Taxable income behind each child of school age.
7. Amount of net national production behind each child of school age and behind each child enrolled.
8. Total provincial and municipal revenue behind each child enrolled and behind each child of school age[4].

While previous studies have pointed the way, it is hoped to devise a somewhat different approach from any suggested by the experts. There are good reasons for this. Firstly, most of the American studies

1. Paul R. Mort, State support for public schools, New York, Bureau of Publications, Teachers' College, Columbia University, 1926, pp.16-20.
2. _____, Lawlor, et al., Principles and methods for distributing Federal aid to education, Washington, U.S. Government Printing Office, 1939, pp. 56-57.
3. Norton and Norton, op. cit., pp. 35-46.
4. Kenneth F. Argue, op. cit., pp. 12-19.

have as their objective the equalization of the educational burden within states and, thus, were meant to devise some method of estimating taxpaying ability of local educational areas. Secondly, the problem of weighting the various factors used in the American studies is, in itself, an undertaking of a large scope. This study will adopt some of the measures advocated by Argue and mentioned on the previous page. However, it is judged unnecessary to carry out all the comparative measures he used. Some have been adopted when they add to the picture of comparative ability which is being built.

Since measures of ability of the Canadian provinces to pay for education are necessarily comparative and since ability to pay for education cannot really be separated from taxpaying ability in general, this study proposes to go beyond Argue's techniques in an attempt to obtain comparative measures which will provide a basis for more objective decisions. A few types of basic economic data will be used in an attempt to judge the total taxpaying ability of the provinces.

TABLE IX

PERSONAL INCOME PER ADULT IN THE CANADIAN PROVINCES

	Total Personal Income (1949)[1] (thousands)	Estimated Total Adults (1949) (thousands)	Income per Adult (1949) $
NFLD.	Not available	190.9	
P.E.I.	52,000	55.9	930
N.S.	453,000	390.5	1,160
N.B.	316,000	297.0	1,064
QUE.	3,138,000	2,274.4	1,379
ONT.	4,898,000	2,947.4	1,662
MAN.	712,000	503.1	1,415
SASK.	827,000	534.3	1,548
ALBERTA	879,000	537.7	1,635
B.C.	1,190,000	762.1	1,561

1. Dominion Bureau of Statistics, National accounts, income and expenditure, 1942-1949 and supplementary tables, Ottawa, 1950, p.36.

TABLE X

PERSONAL INCOME BEHIND EACH POTENTIAL WEIGHTED PUPIL; ABILITY OF THE PROVINCES TO SUPPORT EDUCATION AS SHOWN BY PERSONAL INCOME BEHIND EACH POTENTIAL WEIGHTED PUPIL

	(1) Income per Adult $	(2) Adults per Potential Weighted Pupil.[1]	(3) Total Income Behind Each Potential Weighted Pupil. $	(4) Comparative Ability (B.C.'s Ability Being Taken as an Index of 1.00)
NFLD.	..... Data not available			
P.E.I.	930	2.5	2,325	0.35
N.S.	1,160	2.5	2,900	0.43
N.B.	1,064	2.4	2,554	0.38
QUE.	1,379	2.8	3,861	0.58
ONT.	1,662	3.6	5,983	0.89
MAN.	1,415	3.4	4,811	0.72
SASK.	1,548	2.7	4,180	0.62
ALBERTA	1,635	2.9	4,742	0.71
B.C.	1,561	4.3	6,712	1.00

1. Table VIII, *supra*, p.28.

2. ABILITY AS REVEALED BY PERSONAL INCOME BEHIND EACH POTENTIAL WEIGHTED PUPIL

It will be noted that two measures of educational need have been discarded, as far as the calculations in this section are concerned. For reasons which have already been given it is felt that the potential weighted pupil represents the most accurate measure of educational need. Accordingly, this measure will hereafter be used exclusively when a measure of need is required.

According to Table X, the Maritimes would appear to have very low ability in comparison with other parts of Canada. Quebec and Saskatchewan, while they show ability considerably greater than that of the Maritimes, seem to be in a class which might be called medium low. Alberta and Ontario are comparatively high in ability while British Columbia has the highest ability of any of the Canadian provinces.

3. ASSUMPTION REGARDING QUEBEC'S MUNICIPAL REVENUE

The next section of this investigation into ability will inquire into the field of provincial and municipal revenue as an indication of the extent to which the provinces are capable of supporting education.

It will be noted that data for the municipal revenue of Quebec have been given in Table XI although that province does not report its municipal revenue. In order that some indication might emerge as to Quebec's ability it was thought advisable to assume that it would not be unreasonable to fix that province's municipal revenue at a figure equal to its provincial revenue. The fact that the two sums are nearly equal in the case of Ontario influenced the decision to make

this assumption. Certainly Quebec's municipal revenue could not be said to be more than its provincial revenue in the light of the relationship which exists between the two in the other provinces. If anything, this treatment will over-estimate rather than under-estimate Quebec's ability.

TABLE XI

TOTAL REVENUE OF THE CANADIAN PROVINCES (1949)

	Total Provincial Revenue[1] (thousands) $	Total Municipal Revenues[2] (thousands) $	Total Revenue (thousands) $
NFLD.	26,071	Data not available.....	
P.E.I.	5,092	1,008	6,100
N.S.	34,257	16,627	50,884
N.B.	29,414	14,800	44,214
QUE.	206,814	206,814[3]	413,628
ONT.	228,147	228,597	456,744
MAN.	36,859	37,667	74,526
SASK.	62,015	42,162	104,177
ALBERTA	89,508	47,663	137,171
B.C.	115,109	56,160	171,269

1. Dominion Bureau of Statistics, Financial Statistics of Provincial Governments (1949, Ottawa, 1950.
2. _____, Financial statistics of Municipal governments, (1949), Ottawa, 1950.
3. Supra, p.36.

TABLE XII

ABILITY OF THE PROVINCES TO SUPPORT EDUCATION AS SHOWN BY THE AMOUNT OF TOTAL REVENUE BEHIND EACH POTENTIAL WEIGHTED PUPIL

	Number of Potential Weighted Pupils (thousands)	Amount of Total Provincial and Municipal Revenue Behind Each Potential Weighted Pupil $	Ability of Each Province (B.C.'s Ability Being Taken as an Index of 1.00)
NFLD.	94.3	Data not Available	
P.E.I.	22.3	274	0.29
N.S.	159.1	320	0.33
N.B.	123.8	358	0.37
QUE.	815.1	507	0.53
ONT.	824.9	554	0.58
MAN.	148.7	501	0.52
SASK.	197.7	525	0.55
ALBERTA	186.2	736	0.77
B.C.	178.0	962	1.00

4. TOTAL PROVINCIAL AND MUNICIPAL REVENUE AS A MEASURE OF ABILITY

Tables XI and XII investigate the ability of the provinces to support education as shown by the total of their combined provincial and municipal revenue. Since education is paid for from these funds, it is relevant to inspect the public funds when seeking an indication of the ability of the provinces to pay for education.

Table XI gives the data regarding provincial and municipal revenue. It will be noted that municipal revenue is not given for Newfoundland. Newfoundland was so newly a province in 1949 that the gathering of statistics there had not progressed to the extent that it had in other provinces.

Table XII gives an index of ability for each province based on the amount of provincial and municipal revenue received by each province. On the basis of this criterion the previous conclusion about the low ability of the Maritimes seems to be confirmed. These provinces on the average have only about one-third of the ability of British Columbia. Ontario, Manitoba and Saskatchewan are grouped in what might be called the medium ability bracket. The low position of Ontario here is thought-provoking. It certainly indicates that the ability of this province, at least, should be investigated.further. It suggests that it would be most advisable to enquire into the taxation structures of the provinces in order to obtain an index based on the amount of revenue which each province might have if it taxed itself up to the level of its ability. This index is based only on the actual revenue obtained by the taxation level and methods in use at present.

Alberta appears to have about the same ability on this index as on the last one. It is necessary to exercise care in thinking about Alberta's revenues which even in 1949 were very much swollen by fees arising from the development of the oil industry. It is open to question whether all of this revenue should be considered as ordinary revenue since it represents the realization of cash from an exhaustible resource. However, these revenues had not risen by 1949 to their present huge size. Perhaps this fact will make the calculations regarding Alberta more accurate than they would be if they were based on revenues for a later year.

TABLE XIII

EXPENDITURES BY THE PROVINCES
ON ELEMENTARY AND SECONDARY EDUCATION

	Total Expenditure[3] (thousands) $	Expenditure per Pupil (dollars)
NFLD.	4,394.5[2]	60
P.E.I.	996.1	55
N.S.	11,647.1	92
N.B.	8,349.4	89
QUE.	62,218.8[1]	107
ONT.	85,528.4	121
MAN.	16,621.3	135
SASK.	20,532.5	123
ALBERTA	22,939.6	143
B.C.	31,625.3	203

1. Data by courtesy of the Minister of Education, Province of Quebec, letter dated Nov. 17, 1950.
2. Data by courtesy of the Minister of Education, Province of Newfoundland, letter dated Jan. 17, 1951.
3. All other data taken from the annual reports of the Departments of Education of the provinces, with capital expenditures (building, etc.) from current revenue subtracted where applicable.

TABLE XIV

TOTAL EXPENDITURE WHICH EACH PROVINCE WOULD HAVE TO PROVIDE IN ORDER TO ATTAIN A PER PUPIL EXPENDITURE AS GREAT AS THAT OF BRITISH COLUMBIA ($203 per pupil enrolled)

	Total Pupils Enrolled (thousands)	Necessary Expenditure to Equal B.C.'s Expenditure Per Enrolled Pupil (thousands)
NFLD.	72.9	14,798.7
P.E.I.	18.0	3,654.0
N.S.	127.1	25,801.0
N.B.	93.6	19,000.8
QUE.	582.5	118,247.5
ONT.	704.3	142,972.9
MAN.	122.9	24,948.7
SASK.	166.9	33.880.7
ALBERTA	160.8	32,642.4
B.C.	155.5	31,566.5[1]

1. The discrepancy here between this figure and that of Table XIII is due to the rounding-off of the figure of $203.36 to $203 in calculating this table.

5. PRESENT EXPENDITURE PER PROVINCE ON EDUCATION COMPARED WITH EXPENDITURE NECESSARY TO REACH BRITISH COLUMBIA'S EXPENDITURES PER PUPIL ENROLLED

Table XIII gives the amount now being spent on education by each of the provinces and the expenditure per enrolled pupil which these amounts represent. The low per pupil expenditures of the Maritime provinces and of Newfoundland would seem to reflect the low ability to pay which previous investigations have indicated. It is interesting to note that the per pupil expenditure of the Maritimes on the average is little more than one-third that of British Columbia and not a great deal more than one-half that of Alberta.

Table XIV shows the expenditure which each province would have to make on education to equal the $203 per enrolled pupil now being devoted to this purpose by British Columbia. A comparison of the amounts now being spent, as given in Table XIII with the amounts needed as shown in Table XIV, will bring to light a number of interesting facts. The Maritimes generally would obviously have to increase their expenditures by 100-200 percent. Quebec would have almost to double its present expenditure while Ontario would have to make a 75 percent increase. The prairie provinces would have to make corresponding substantial increases.

Perhaps it should be stated here that it is not being advocated that all provinces must spend at the rate being maintained by British Columbia in order to attain a desirable standard of education. However, it is suggested that some equalization needs to be carried out when the expenditure per pupil enrolled varies within a country as greatly as it does in Canada. It is the purpose of this section to discover to what extent this equalization can be carried out by the unaided efforts of the various provinces, and to what extent they are incapable of carrying it out.

TABLE XV

PERCENT OF TOTAL REVENUE WHICH WOULD BE REQUIRED TO SUPPORT EDUCATION IN ALL PROVINCES AT B.C.'S RATE, AND THE PERCENT NOW ACTUALLY BEING USED FOR THE SUPPORT OF EDUCATION

	Percent Now Being Used To Support Education at Its Present Level[1]	Percent Required to Support Education at B.C.'s Level of Expenditure
NFLD.	..... Data not Available	
P.E.I.	16.3	59.9
N.S.	22.9	50.7
N.B.	18.9	43.2
QUE.	15.0	28.5
ONT.	18.7	31.3
MAN.	22.3	33.4
SASK.	19.7	32.6
ALBERTA	16.7	23.8
B.C.	18.5	18.5

1. Obtained by using revenue as given in Table XI and expenditures as given in Table XIII.

TABLE XVI

PERCENT OF TOTAL PERSONAL INCOME NOW USED TO SUPPORT EDUCATION AND THE PERCENT WHICH WOULD BE NEEDED TO SUPPORT EDUCATION AT B.C.'S LEVEL IN EACH PROVINCE

	Percent Now Used	Percent Needed to Support Education at B.C.'S Level ($203 per Pupil Enrolled)
NFLD.	..... Data not Available	
P.E.I.	1.91	7.02
N.S.	2.56	5.69
N.B.	2.63	6.01
QUE.	1.98	3.79
ONT.	1.75	2.91
MAN.	2.33	3.50
SASK.	2.48	4.09
ALBERTA	2.61	3.71
B.C.	2.66	2.66

6. POSSIBILITY OF THE OTHER PROVINCES REACHING B.C.'S EXPENDITURE PER ENROLLED PUPIL BY DEVOTING MORE OF THEIR TOTAL REVENUE TO EDUCATION

Tables XV and XVI seek to further this investigation into the ability of the provinces to finance education by discovering to what extent the financing of education would use provincial and municipal funds if each province were to spend per enrolled pupil that sum now being spent by British Columbia. Table XV indicates that the Maritime provinces would have to devote to education one-half or more of their total revenues as opposed to the one-sixth to one-quarter which they are at present using for this purpose. It could probably be argued with justice that no province could devote such a large share of its total revenues to education. Ontario, Manitoba and Saskatchewan would achieve the same result by devoting one-third of their revenues to education. This is probably more than a province could be expected to do. They are devoting approximately one-fifth of their revenues to this purpose now. Alberta would have to use about a quarter of its revenues as opposed to about one-sixth at present. It is worth noting that there is no significant difference between the fraction being used for education by Ontario and British Columbia. Yet this fraction results in a per pupil expenditure more than 40% greater in the latter province. This fact would seem to strengthen the evidence in favour of investigating the taxation structures of the provinces.

Table XVI shows the percent of total personal income now being devoted to education and the percent which would have to be used for this purpose were all provinces to increase their expenditure per pupil enrolled to that now being maintained by British Columbia. It

is interesting mainly in that it reveals that the percentage would have to be decidedly higher in the Maritimes than it would be anywhere else. It, thus, further proves the comparatively low ability of that section of the country.

7. THE NEED FOR A FURTHER MEASURE OF ABILITY TO FINANCE EDUCATION BASED ON TOTAL TAXPAYING ABILITY

It has become increasingly clear as this investigation has proceeded that a reliable measure of the ability of the provinces to support education cannot be separated from a measure of their ability to pay taxes in general. It is unlikely that any province would increase its taxation as sharply as some would have to,to reach British Columbia's standard of expenditure and then devote the whole proceeds of such an increase to education. Therefore, it would seem logical to devise some measure of total taxpaying ability and proceed from that to a measure of ability to pay for education. In an attempt to devise an equitable means of measuring total taxpaying ability, it has been decided to take the data for three basic economic activities: net production, total retail sales, and total personal income, and to combine these into what will hereafter be called an economic activity total. This total cannot have any objective meaning as a total and is not intended to have such a meaning. These basic economic data do have one thing in common: each is an indication of what is happening in the financial life of the province concerned. Net production is an indication of the wealth which is being produced within a province; total retail sales indicate how much money people in a province have to use; total personal income is a concrete indication of the amount of money all of the people of a province have

received during a given year. It has been decided to use composite totals obtained by adding these three factors in the hope that such a multiple use of data, each of which is a good indication in itself of financial standing, may smooth out many of the inequalities which might show up when one factor is used to the exclusion of the others.

TABLE XVII

NET PRODUCTION, RETAIL SALES, AND TOTAL PERSONAL INCOME FOR EACH OF THE CANADIAN PROVINCES

	(1) Net Production[1] (thousands) $	(2) Retail Sales[2] (thousands) $	(3) Total Personal[3] Income (thousands) $	(4) Economic Activity Total (Total Columns 1,2 & 3 (thousands) $
NFLD.	74,882	..... Data not Available		
P.E.I.	28,385	45,333	52,000	125,718
N.S.	271,185	315,433	453,000	1,039,618
N.B.	218,423	252,348	316,000	786,771
QUE.	2,615,449	1,890,720	3,138,000	7,644,169
ONT.	4,114,752	3,234,540	4,898,000	12,247,292
MAN.	477,290	556,280	712,000	1,745,570
SASK.	618,211	519,460	827,000	1,964,671
ALBERTA	694,864	573,120	879,000	2,146,984
B.C.	869,201	940,030	1,190,000	2,999,231

1. Dominion Bureau of Statistics, Survey of Production, 1949, Ottawa, 1950.
2. _____, Retail trade, 1949, Ottawa, 1950.
3. _____, National accounts, income and expenditure, 1942-1949, and supplementary tables, 1950, Ottawa.

TABLE XVIII

PERCENT OF THE ECONOMIC ACTIVITY TOTAL WHICH IS REPRESENTED BY THE TOTAL REVENUE OF EACH PROVINCE

	Percent of Economic Activity Total Which Is Represented By The Total Revenue of Each Province[1]
NFLD.	Data not Available
P.E.I.	4.9
N.S.	4.9
N.B.	5.6
QUE.	5.4
ONT.	3.7
MAN.	4.3
SASK.	5.3
ALBERTA	6.4
B.C.	5.7

1. Obtained by using Revenue as given in Table XI and Economic Activity Totals as given in Table XVII.

TABLE XIX

TOTAL REVENUE WHICH WOULD BE RAISED BY EACH PROVINCE IF ITS REVENUE WERE TO BE THE SAME PERCENTAGE OF ECONOMIC ACTIVITY TOTAL AS IS B.C.'s (5.7)

	(1) Total of Net Production Retail Sales & Personal Income (millions)	(2) Potential Revenue[1] (millions)	(3) Present Revenue (millions)	(4) Potential Added Revenue (millions)
NFLD.	..... Data not Available			
P.E.I.	125.7	7.2	6.1	1.1
N.S.	1,039.6	59.3	50.9	8.4
N.B.	786.8	44.8	44.2	0.6
QUE.	7,644.1	435.7	413.6	22.1
ONT.	12,247.3	698.1	456.7	241.4
MAN.	1,745.6	99.5	74.5	25.0
SASK.	1,964.7	112.0	104.2	7.8
ALBERTA	2,147.0	122.4	137.2	-14.8
B.C.	2,999.3	171.3	171.3	0.0

1. Obtained by multiplying the Economic Activity totals of the provinces (Table XVII) by 6.2/100.

8. ABILITY AS ESTABLISHED BY THE ECONOMIC ACTIVITY TOTAL

The conclusions to be drawn from the data presented in Tables XVII - XIX are based on the assumption that the other provinces would not be unduly burdening themselves if they were to increase their rate of taxation until their total revenue bore the same relationship to their economic activity total as does that of British Columbia. It is admitted that the poorer provinces might find this difficult but at least the assumption will provide a working basis for judging to what extent, if any, the various provinces are under-taxing themselves.

Table XVIII shows that British Columbia's total provincial and municipal revenue is 5.7% of its economic activity total. Table XIX shows what this revenue would be for each of the other provinces if they taxed themselves at such a rate that their revenues were 5.7% of their economic activity totals. It also shows the added revenues which would result. An interesting outcome of these calculations is shown in the case of Alberta. On the basis of this criterion, Alberta is already over-taxing itself by more than fourteen million dollars annually. There is very little doubt that this seeming over-taxation can be attributed to the sums added to total revenue by the oil boom. Prince Edward Island would apparently be able to increase its total revenue by more than a million dollars while Ontario could find the huge sum of 241 millions. All the other provinces would seem to be able to add substantial amounts to their revenues.

9. POSSIBLE ADDITIONAL REVENUE FOR EDUCATION

It would be absurd to suggest that these additional revenues which Table XIX suggests might be raised should all go to the support of education. Desirable as that might be, it is certain that all the other needs of the government departments would claim a share. The best that might be hoped for is that each would continue to contribute to education a percentage of its total provincial and municipal revenues not less than it is now contributing.

Since British Columbia has been used as a standard thus far it is considered advisable to continue this practice throughout. Accordingly, it is being assumed that the percentage of total revenue being devoted to education by that province would be a reasonable percentage for the other provinces to contribute if they were to tax themselves as heavily as British Columbia is doing. This course has the added advantage that, since British Columbia's percentage is now one of the lower ones, it is less likely that the ability of any province will be overestimated.

Table XX shows the amounts which would be realized in this event. This table reveals that all the provinces would realize substantially increased educational funds under the conditions under which the table was calculated, with the exception of Nova Scotia, New Brunswick and Alberta.

Table XXI gives the amount of money which each province would have to spend on education in order to attain British Columbia's expenditures per potential weighted pupil. The figure of $177 per potential weighted pupil was obtained by dividing British Columbia's actual expenditure by the number of such pupils in that province.

TABLE XX

AMOUNT OF MONEY WHICH WOULD BE AVAILABLE FOR THE SUPPORT OF EDUCATION IN EACH PROVINCE IF ALL THE PROVINCES TAXED AS SHOWN IN TABLE XIX, AND IF EACH CONTRIBUTED TO EDUCATION THAT PERCENTAGE OF TOTAL REVENUE NOW BEING CONTRIBUTED BY B.C. (18.5%)

	(1) Total Potential Revenue (millions)	(2) Potential Amount Available For Education (millions)	(3) Actual Expenditure On Education 1949 (millions)	(4) Potential Increase over Actual Expenditures in 1949 (millions)
NFLD.	..... Data not Available			
P.E.I.	7.2	1.3	1.0	0.3
N.S.	59.3	11.0	11.6	-0.6
N.B.	44.8	8.3	8.3	0.0
QUE.	435.7	80.6	62.2	18.4
ONT.	698.1	129.1	85.5	43.6
MAN.	99.5	18.4	16.6	1.8
SASK.	112.0	20.7	20.5	0.2
ALBERTA	122.4	22.6	22.9	-0.3
B.C.	171.3	31.6	31.6	0.0

TABLE XXI

AMOUNT EACH PROVINCE WOULD HAVE TO SPEND ON EDUCATION IN ORDER TO ATTAIN B.C.'S STANDARD OF EXPENDITURE PER POTENTIAL WEIGHTED PUPIL; AND THE AMOUNT EACH WOULD HAVE TO SPEND TO ATTAIN A STANDARD OF EXPENDITURE PER POTENTIAL WEIGHTED PUPIL OF THREE-FOURTHS OF B.C.'S RATE ($177 x 3/4 or $133)

	(1) Number of Potential Weighted Pupils (thousands)	(2) Necessary Expenditure To Equal B.C.'s Expenditure Per Potential Weighted Pupil (millions)	(3) Necessary Expenditure to Equal 3/4 of B.C.'s Expenditure per Potential Weighted Pupil (millions)
		$	$
NFLD.	94.3	16.7	12.5
P.E.I.	22.3	4.0	3.0
N.S.	159.1	28.2	21.1
N.B.	123.8	22.0	16.5
QUE.	815.1	144.0	108.0
ONT.	824.9	147.0	110.0
MAN.	148.7	26.4	19.8
SASK.	197.7	35.0	26.3
ALBERTA	186.2	32.9	24.7
B.C.	178.0	31.6	23.7

10. INADEQUACY OF THE POSSIBLE ADDITIONAL REVENUE FOR EDUCATION

A comparison of the amounts which would be made available for education as given in Table XX, Column 2, with those which would be necessary in order to enable the other provinces to educate the pupils who should be in school at the rate being maintained by British Columbia as given in Table XXI, Column 2, is now necessary. Prince Edward Island would still be faced with a deficit of more than two and one-half millions. Nova Scotia's deficit would be more than seventeen millions. New Brunswick would be short fifteen millions. Quebec would need another sixty-three millions and even Ontario would be several millions short. In fact, Alberta is the only province which would come close to realizing the amount needed.

At first sight this would seem to be a very serious situation, indeed. Caution must be observed, however, in interpreting the results of these calculations. To begin with, there is no proof that British Columbia's ratio of educational expenditure to total revenue (18.5%), which has been used to calculate the amount of funds needed, is the right ratio. Perhaps twenty percent, or even twenty-five percent, would be a reasonable rate. Most provinces are devoting more than eighteen and one-half percent of total revenue to education at present. It is obvious that exhaustive research would have to be conducted into the whole basis of provincial and municipal financing in order to determine what the percentage should be. Secondly, it might be argued that it is unreasonable to expect all of the provinces to attain the standard of educational expenditure which the province

spending the most finds itself capable of maintaining, or even that other provinces might get the same value for less money. It is admitted that there might be justice in this position. Accordingly, a further calculation was undertaken.

It would be a tenable position, it is believed, to assert that while it may be unreasonable for each province to be expected to spend per pupil on education what the highest province is spending, the lowest province should not be spending less than three-quarters as much per unit of educational need. Table XXI shows the sum which each province would have to spend on education if it were to spend at three-quarters of British Columbia's rate per potential weighted pupil ($177 x 3/4 = $133). It will be seen from these calculations that the Maritimes would face a substantial though reduced deficit, as would Quebec. Ontario would seem to be able to carry this expenditure and have a surplus. The prairie provinces with the exception of Saskatchewan appear able to finance these amounts, with Alberta having a substantial surplus.

One more table will complete this section on the ability of the provinces to support education. Table XXIII will seek to compare each province's share of Canada's (1) total net production; (2) total personal income; and (3) economic-activity total, with each province's share of Canada's total educational needs.

TABLE XXII

SHARE OF EACH PROVINCE
IN
(1) TOTAL NET PRODUCTION, (2) TOTAL PERSONAL INCOME, AND
(3) ECONOMIC ACTIVITY TOTAL[1]
AS COMPARED TO
EACH PROVINCE'S SHARE OF CANADA'S TOTAL EDUCATIONAL NEEDS

	(1) Province's Share of Total Net Production[2] (percent)	(2) Province's Share of Total Personal Income (percent)	(3) Province's Share of Economic Activity Total (percent)	(4) Province's Share of Total Educational Need Based on Potential Weighted Pupils (percent)
NFLD.	0.75	.....Data not Available		3.4
P.E.I.	0.28	0.4	0.41	0.8
N.S.	2.71	3.6	3.4	5.8
N.B.	2.19	2.5	2.6	4.5
QUE.	26.16	25.2	25.0	29.6
ONT.	41.16	39.3	40.1	30.0
MAN.	4.78	5.7	5.7	5.4
SASK.	6.18	6.6	6.4	7.2
ALBERTA	6.95	7.0	7.0	6.8
B.C.	8.70	9.5	9.8	6.5

1. Economic Activity total has previously been defined as the total of Personal Income, Net Production, and Retail Sales.
2. Dominion Bureau of Statistics, Survey of production, 1949, Ottawa, 1951

11. NEED FOR DOMINION AID TO EDUCATION AS SHOWN BY EACH PROVINCE'S SHARE OF THE EDUCATIONAL NEEDS OF CANADA COMPARED WITH ITS SHARE OF CANADA'S ECONOMIC ACTIVITIES TOTAL

The data presented in Table XXII are considered to be of very great importance in the development of this study. Every other index of ability which has been presented has been exclusively comparative. That means that no positive statement can be made as to the actual ability of the provinces to support education, at least on the basis of previous calculations. It is held that Table XXII does give an indication of ability which is not entirely comparative. For example, when it is found that Newfoundland, with less than one percent of the country's net production has to meet three and one-quarter percent of the country's educational needs, it should be a supportable position to insist that the ability of that province is much below the educational job which it has to do. It follows from this statement that there is a need for aid from somewhere, if the boys and girls in Newfoundland are to be educated as they should be. It is hard to imagine such aid coming from a source other than the Dominion government; hence, it would seem that some evidence of a need for Dominion aid to education has been established by Table XXII. This table is particularly valuable in that it has given, for the first time in this study, a partial measure of Newfoundland's ability to finance education.

A glance at the rest of Table XXII will reveal that the situation already discussed with reference to Newfoundland is substantially the same in the other Maritime provinces. Quebec would appear to be in a reasonably equitable position. Ontario's share of Canada's economic activity total is substantially greater than its share of Canada's

educational needs. Saskatchewan, on the other hand, enjoys a smaller fraction of the economic activity total than its fraction of Canada's educational need. Alberta seems to have the ability to carry its educational load while British Columbia shows considerably greater ability than its need would seem to indicate was necessary.

12. A SUMMARY OF THE FINDINGS OF THIS SECTION

1. The Maritime provinces seem to have a very low ability to finance education when compared to that of other sections of this nation..

2. The ability of Quebec and Saskatchewan appear to be substantially lower than that of any other provinces except the Maritimes.

3. Manitoba would seem to have fairly high ability in comparison with the provinces mentioned in 1, 2 and 3.

4. British Columbia, Ontario and Alberta have the highest ability in Canada by a wide margin.

5. Manitoba, Alberta, Ontario and British Columbia could be said to be capable of carrying their present educational loads if the data in Table XXII is a fair indication, as it is believed to be.

6. Strong evidence of the need for Dominion aid to education would seem to have emerged from the data in Table XXII though this one table is hardly sufficient to substantiate such need. There would appear to be very little doubt, however, that the Maritimes are badly in need of some outside aid if they are to carry their share of the country's educational need.

CHAPTER IV

CONCLUSION

1. SUMMARY OF CONCLUSIONS OF THIS INVESTIGATION

At the beginning of this report it was stated that its purpose was to contribute to the general research which must be done before a final decision can be made as to the necessity for Dominion aid to education. This was to be accomplished by inquiring into the educational load being carried by each Canadian province and by assessing in a comparative way the abilities of the provinces to carry the educational responsibilities which they face. It is felt that this objective has been accomplished and that it would be in order at this point to summarize the results of the investigation. It would appear that the following conclusions are justified:

1. Newfoundland's educational load is much greater than that of any other province. The other Maritime provinces have substantially greater loads than those of the rest of Canada with the possible exception of Saskatchewan. Thus, it would seem that the four most easterly provinces as a group are faced with the greatest task of any part of the country in adequately providing for the education of their boys and girls.

2. Saskatchewan has, comparatively speaking, a very heavy load and can be placed next to the Maritimes in this respect.

3. Alberta and Quebec, while their loads are significantly less than those of the Maritimes, must be classed as having heavy loads in comparison with British Columbia and Ontario as well as Manitoba.

4. Ontario and Manitoba are carrying loads of very reasonable proportions as compared to the provinces already mentioned, while British Columbia has by far the lightest educational load of any of the Canadian provinces.

5. The Maritime provinces seem to have a very low comparative ability to pay for education. The ability of Quebec and Saskatchewan, while higher than the Maritimes, is substantially lower than that of any other part of Canada.

6. Manitoba apparently has a fairly high level of ability as compared to the provinces mentioned in (5) above.

7. British Columbia, Ontario and Alberta would seem to have the highest level of ability of the Canadian provinces with their abilities probably being ranked in the order given, with British Columbia highest.

8. British Columbia, Alberta, Ontario and Manitoba might be said to be capable of meeting their present needs. This must be qualified by saying that it is true only if British Columbia which has been used as the yardstick, is not facing too great a load nor taxing itself at too high a rate.

9. Strong evidence of the need for Dominion aid to education, particularly in the Maritimes, would seem to be indicated by Table XXII though such a need cannot be said to be positively established by the findings of one aspect of an investigation. There would appear, however, to be very little doubt that the Maritimes, at least, must have some outside aid if they are to keep up to the standards of the other provinces in the matter of the support of education.

2. SUGGESTED FIELDS FOR FURTHER RESEARCH

Finally, it would seem to be in order to list a few topics requiring more research which would have to be investigated before the need for Dominion aid to education could be established or denied.

1. It is essential that the nature of a basic minimum programme of education for the country as a whole be established and that the cost of such a programme be calculated.

2. Research is needed to establish what weighting should be given to varying urban-rural population ratios in the different Canadian provinces in order that educational needs may be more accurately assessed.

3. Some method must be devised to reduce the assessments of property in the various provinces to a common level in order that this source of taxation might be more accurately compared.

4. Some method is needed to assess the effect, if any, on the financial needs of the educational units in the different provinces, of regional variations in cost of living. This might be tied to a larger investigation into the adjustments necessary in the amounts of money needed for education for each point of increase or decrease in the cost of living index.

Undoubtedly, there are many other topics which would be valid subjects for research. These are presented as a few, the need of which has become evident during the course of this investigation.

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